

**REMARKS**

Claims 1, 3-15, 17-27, and 30-33 are pending in the present application. No amendments to the claims are offered herein. The specification has been amended to recite patent numbers of the U.S. Patent Applications that have issued as U.S. Patents. As no new matter has been added by this amendment to the specification, entry is respectfully requested.

Applicants point out that the present case is related to co-pending cases US Application No. 09/888,261 (Attorney Docket No. 018563-003410), which has been allowed, and US Application No. 10/359,998 (Attorney Docket No. 018563-003420). Applicants believe that the identified related and co-pending cases and prosecution histories have been considered by the Examiner with respect to examination of the present case, for example, since each of these cases share a common Examiner, and because awareness these related cases has been indicated by the Examiner in telephone discussion between Applicants' representative and Examiner Sharon (e.g., telephone interview of 6/29/07 regarding present US Application No. 10/670,162). While Applicants believe that each of these related cases has been considered by the Examiner and that prosecution histories of each case are readily available to the Examiner (e.g., public PAIR), Applicants will readily provide any portions of file histories upon request.

Specification

The disclosure is objected to because of cited informalities. Pursuant to the Examiner's suggestion, paragraph [0001] of the specification has been amended to recite the patent numbers of the U.S. Patent Applications that have issued as U.S. Patents. Removal of the objection is respectfully requested.

Rejections Under 35 U.S.C. §103

Claims 1, 3, 9-15, 17-23, and 30-33 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chishti in view of Watt.

Applicants respectfully traverse the rejection and do not acquiesce to any reasoning provided by the Examiner. For reasons set forth below, as well as those previously

made of record, it is submitted that the cited references fail to teach or suggest each and every element of the currently claimed invention, thereby precluding a case of *prima facie* obviousness.

As previously pointed out, the method of claim 1 provides elements and numerous advantages in computer modeling of a patient's teeth that are simply not found in the prior art. First, creating a parametric representation of the teeth as recited in claim 1 provides improved imaging/computer modeling of a patient's teeth, including improved imaging/modeling of exposed surfaces as well as unexposed surfaces or portions of the teeth (e.g., interproximal areas, tooth root, root shapes, etc.) not necessarily visible from the original input mesh data set. Second, creation of the parametric representation as described actually significantly reduces image file size, thereby effectively providing a sort of compression of the digital data set, and permitting more efficient data transmission. Third, while digital data set size is significantly reduced, the described and claimed methods provide this and other advantages without sacrificing image resolution. The cited reference fail to provide the significant advantages of the methods of the invention and, taken alone or in combination, fail to teach each and every element of the computer-implemented method as recited in claim 1.

Chishti at least fails to teach creating a parametric representation of the teeth from meshes, or creating such a representation that includes the tooth surface image data (e.g., exposed/unexposed tooth surface image data) as recited in claim 1, and further fails to teach any means of preserving image resolution. In fact, Chishti teaches just the opposite in teaching an embodiment including removal of data in order to generate a lower resolution image for improving manageability of data transmission. Watt merely provides generic teachings regarding surface fitting/rendering techniques in general, but lacks specific teachings necessary to support any rationale or specific guidance for applying these techniques in dental/orthodontics or creating a representation of a patient's teeth as recited in claim 1.

It is alleged in the Final Office Action (items 44, 45; page 20) that the current claims are merely reciting an intended use of structure shown in the prior art, and that the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. While no

authority is cited in the Office Action, the Examiner appears to be relying on the principle set forth in MPEP §2114 requiring that apparatus claims must be structurally distinguishable from the prior art. Applicants submit that this basis of the rejection is grossly misplaced as no apparatus claims are currently under examination. Accordingly, either clarification or withdrawal of this basis of the rejection is respectfully requested.

In regard to the Examiner proposed reconstruction of the teachings of Chishti in view of Watt, Applicants respectfully point out, as is well known by the Examiner, that the courts have repeatedly instructed against rejections that merely use the claimed invention as a blueprint or template for piecing together elements in the prior art in an attempt to defeat patentability. *In re Rouffet*, 47 USPQ2d 1453 (Fed.Cir. 1998). In the present case, a case of obviousness in view of the cited references would not be found because not only would the proposed combination fail to teach the claimed invention, but only by improperly using Applicants own claims as a template and under the distortion of hindsight bias could one even re-assemble the various aspects of the cited references as suggested by the Examiner in the first place (which would still fail to teach the claimed invention).

As such, the traversal of the present rejection is maintained and Applicants further submit that the arguments presented in the Final Office Action fail to rebut Applicants remarks demonstrating that a *prima facie* case of obviousness has not been made. Accordingly, Applicants respectfully request that the rejections of claims 1, 3, 9-15, 17-23, and 30-33 under 35 USC §103(a) be withdrawn and the claims allowed.

Claims 4-8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chishti in view of Watt and further in view of Official Notice.

The combination of Chishti and Watt as applied to claim 1 is overcome at least for the reasons set forth above. In particular, neither Chishti nor Watt, alone or in combination, would teach or suggest a method including creating a parametric representation of the teeth from the meshes representing the teeth and the inside outside meshes, the parametric representation comprising exposed tooth surface image data and unexposed tooth portion image data, and further providing compression of the digital data set, as recited in claim 1. The Official Notice

fails to provide the teachings that are missing from Chishti and Watt. Dependent claims 4-8 will be allowable at least for depending from allowable independent claim 1.

Accordingly, Applicants respectfully request that the rejections of claims 4-8 under 35 U.S.C. §103(a) be withdrawn.

Claims 24-26 are rejected under 35 U.S.C. §103(a) as being unpatentable over Chishti in view of Watt, and further in view of Yamani.

The combination of Chishti and Watt as applied in rejection of claim 24 is overcome at least for a similar rationale as discussed above, for example, with regard to claim 1. Neither Chishti nor Watt, alone or in combination, would teach or suggest a method including each and every element, including at least creating a parametric representation of the teeth from the meshes as recited in claim 24. Yamani is cited as teaching receiving an input from a 3D gyroscopic input device, but Yamani fails to provide the data compression teachings that are missing from Chishti and Watt. Thus the cited references, taken either alone or in combination, would fail to teach or suggest each and every element of the invention as recited in claim 24. Claims 25 and 26 will be allowable at least for depending from allowable independent claim 24.

Accordingly, withdrawal of the rejections of claims 24-26 under 35 U.S.C. §103(a) is respectfully requested.

Claim 27 is rejected under 35 U.S.C. §103(a) as being unpatentable over Chishti in view of Watt, and further in view of Yamani, and further in view of Official Notice.

The combination of Chishti, Watt, and Yamani as applied to claim 24 is overcome for at least the reasons set forth above. The proposed combination of references would fail to teach or suggest each and every element of claim 24. Claim 27 will be allowable at least for depending from allowable independent claim 24.

Accordingly, withdrawal of the rejections of claim 27 under 35 U.S.C. §103(a) is respectfully requested.

**CONCLUSION**

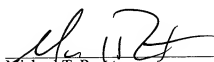
In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 206-467-9600.

Respectfully submitted,

Dated: \_\_\_\_\_

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